
Surface Water Database User Guide & Documentation

California Department of Pesticide Regulation
Environmental Monitoring and Pest Management Branch

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Using This Documentation

This documentation is designed to assist you with the use of the Surface Water Database Data. It contains a description of the structure of the data and lookup tables. A diagram which depicts the relationships between the main surface water data tables and lookup tables is also provided.

Who To Contact

This documentation has been provided by the State of California Department of Pesticide Regulation, Environmental Monitoring and Pest Management Branch. If you have any questions, please contact Keith Starner at: (916) 324-4167 or kstarner@cdpr.ca.gov.

Record Structures and Table Descriptions

The following tables define the record structure of each data file. The “field name” indicates the name of the field. The “start column” indicates the column in which the field begins. The “end column” indicates the column in which the field ends. The “width” specifies how many columns each field uses. The “type” indicates whether the field is a Numeric (N), Character (C), or Date (Date) field. “Mask” displays the field as Numeric, Character, or Date values representing the size of each field along with decimal places (if used). **These record structures count each decimal as a column. If your database application does not count the decimal as a column, please adjust the start and end columns accordingly.** “Description” provides an explanation of the information contained in each field.

Main data tables

surface water analysis (surf) — **Chemical and ELISA analytical results for pesticides in samples taken from California surface water.**

Field Name	Start Column	End Column	Width	Type & Mask	Description
study_cd	1	4	4	N	Number assigned to a monitoring study for database tracking purposes.
county_cd	5	6	2	C	County code established by numbering an alphabetized list of California's 58 counties. For example, '01' = Alameda; '58' = Yuba.
loc_cd	7	10	4	N	Number assigned to each sampling site. When combined with the county_cd, provides a unique code for each sampling site.
samp_date	11	18	8	Date MMDDYYYY	Date of sampling.
extrac_date	19	26	8	Date MMDDYYYY	Date of sample extraction.
anly_date	27	34	8	Date MMDDYYYY	Date of analysis.
agency_cd	35	38	4	N	Code assigned to each agency conducting and reporting surface water monitoring data.
chem_cd	39	43	5	N	DPR code for pesticide active ingredients and breakdown products.
conc	44	57	14	N Floating Decimal	Concentration of the analyte in parts per billion. Non-detects are reported as zero. Concentrations below the limit of quantitation are reported in the database as zero.
loq	58	71	14	N Floating Decimal	Limit of quantitation reported for the analytical method in parts per billion.
coll_meth_cd	72	73	2	N	Code assigned for each sample collection method (e.g. grab).
anly_meth_cd	74	75	2	N	Code assigned for each method of analysis (e.g. GC/MS).
sampler_cd	76	77	2	N	Code assigned for the type of sampler used to collect sample (e.g. composite autosampler).
samp_type_cd	78	79	2	N	Code assigned for each type of sample (e.g., filtered or whole water).
samp_id	80	83	4	N	Used to distinguish between duplicate samples taken on same day.
lab_cd	84	87	4	N	Code assigned to each analytical laboratory.
storm_flag	88	88	1	C	"Y" indicates sample was taken during a storm event to determine pesticide loading in runoff water.
rmk_flag	89	89	1	C	Indicates information in remarks field. "*" = other; "E" = estimated.
remarks	90	189	100	C	Supplemental information pertaining to a sample (e.g., concentration of 0.03 ppb was reported below the loq of 0.05 ppb).

study — Summary of information for each study in the database.

Field Name	Start Column	End Column	Width	Type & Mask	Description
study_cd	1	4	4	N	Number assigned to a monitoring study for database tracking purposes.
study_desc	5	1004	1000	C	Each study is summarized and may include the following: agency name, report title, whether toxicity tests were performed, significance of toxicity test results, geographic area sampled, range of sampling dates, number of pesticides analyzed, pesticides detected, QA/QC documentation.

location — Geographic location information, narrative site descriptions, and other information for each sampling site.

Field Name	Start Column	End Column	Width	Type & Mask	Description
co_mtrs	1	11	11	C	County code + baseline meridian code + township + range + section (U.S. Public Land Survey System).
county_cd	12	13	2	C	County code established by numbering an alphabetized list of California's 58 counties. For example, '01' = Alameda; '58' = Yuba.
loc_cd	14	17	4	N	Number assigned to each sampling site. When combined with the county_cd, provides a unique code for each sampling site.
site	18	117	100	C	Narrative description of sampling site.
lat	118	126	9	N	Latitude in degrees, minutes, and seconds (using coordinates for 1927 North American Datum (NAD27)).
longi	127	136	10	N	Longitude in degrees, minutes, and seconds (using coordinates for 1927 North American Datum (NAD27)).
ddlat	137	144	8	N	Deci-degree latitude (using coordinates for 1927 North American Datum (NAD27)).
ddlongi	145	153	9	N	Deci-degree longitude (using coordinates for 1927 North American Datum (NAD27)).
hyd_unit_cd	154	159	6	N	Hydrologic unit, area, and subarea codes assigned to watersheds in accordance to an interagency agreement between the SWRCB USGS, and DWR (1986).
map	160	184	25	C	Name of USGS 7.5 minute quadrangle map containing sampling site location.
type_cd	158	186	2	N	Code relating to type of water body (e.g., river, drain, storm sewer).
use_cd	187	187	1	C	Code for sites characterized as having agricultural, urban, or mixed uses.

tox — Endpoint measurement results from toxicity tests conducted with surface water samples taken from agricultural, urban, and mixed use areas of California.

Field Name	Start Column	End Column	Width	Type & Mask	Description
study_cd	1	4	4	N	Number assigned to a monitoring study for database tracking purposes.
county_cd	5	6	2	C	County code established by numbering an alphabetized list of California's 58 counties. For example, '01' = Alameda; '58' = Yuba.
loc_cd	7	10	4	N	Number assigned to each sampling site. When combined with the county_cd, provides a unique code for each sampling site.
agency_cd	11	14	4	N	Code assigned to each agency conducting and reporting surface water monitoring data.
lab_cd	15	18	4	N	Code assigned to each analytical laboratory.
samp_no	19	23	5	N	Sample number used for database tracking purposes.
samp_date	24	31	8	Date MMDDYYYY	Date of sampling.
test_start	32	39	8	Date MMDDYYYY	Date toxicity test began.
test_end	40	47	8	Date MMDDYYYY	Date toxicity test ended.
wat_chg_1	48	55	8	Date MMDDYYYY	Date of first water change (for chronic, renewal tests).
wat_chg_2	56	64	8	Date MMDDYYYY	Date of second water change (for chronic, renewal tests).
specie_cd	65	67	3	N	Code for Genus and species name of test organism.
test_cd	68	69	2	N	Code for type and day of test (e.g., chronic test day 3).
mort_samp	70	73	4	N	Percent mortality of test organisms in ambient sample.
mort_cont	74	76	3	N	Percent mortality of test organisms in control sample.
offspg_samp	77	82	6	N	Number of offspring produced by organisms in the ambient sample by the end of the toxicity test.
offspg_cont	83	88	6	N	Number of offspring produced by organisms in the control sample by the end of the toxicity test.
tie	89	89	1	C	"Y" or "N" whether a U.S.EPA Toxicity Identification Evaluation was performed on the ambient sample.
sig	90	90	1	N	A statistically significant difference between the ambient and control samples is designated at the endpoint of the test by a "1"; tests without statistical significance are indicated by a "0" (zero). For purposes of the database, statistical significance is a difference of 30% or greater between the ambient and control samples, where the control sample meets the USEPA requirement of 90% for acute and

					80% for chronic.
wat_tmp	91	96	6	N	Water temperature measurement in degrees Celsius.
wat_ph	97	100	4	N	Water pH measurement.
alka	101	104	4	N	Total alkalinity.
hrdns	105	108	4	N	Hardness (sum of calcium and magnesium expressed as CaCO ₃ , in milligrams per liter).
do	109	114	6	N	Dissolved oxygen in milligrams per liter.
amm_lab	115	121	7	N	Concentration of ammonia measured in the laboratory in parts per billion.
amm_lab_loq	122	128	7	N	Limit of quantitation for method used to quantify ammonia in sample.
amm_loq_remark	129	129	1	C	Reserved for "<" character.
spec_con_lab	130	137	8	N	Specific conductance measured in the laboratory.
spec_con fld	138	144	8	N	Specific conductance measured in the field.
rmk_flag	145	145	1	C	Indicates information in remarks field. "*" = other; "E" = estimated.
remarks	146	245	100	C	Supplemental information pertaining to a sample (e.g., concentration of 0.03 ppb was reported using loq of 0.05 ppb).

Lookup Tables The following tables are used to decode many of the data fields in the surface water database tables.

agency — agency code and agency description (name) used by DPR. Used to decode the **agency_cd** field in the surface water analysis and tox tables.

Field Name	Start Column	End Column	Width	Type & Mask	Description
agency_cd	1	4	4	N	Code assigned to each agency conducting and reporting surface water monitoring data.
agency_desc	5	104	100	C	Agency name.

only_method — analytical method codes and descriptions. Used to decode the **only_meth_cd** in the surface water analysis table.

Field Name	Start Column	End Column	Width	Type & Mask	Description
only_meth_cd	1	2	2	N	Code assigned for each method of analysis (e.g., GC/MS).
only_meth_desc	3	122	120	C	Description of analytical method used.

chem — chemical codes and names used by DPR and USEPA. Used to decode the **chem_cd** field in the surface water analysis table.

Field Name	Start Column	End Column	Width	Type & Mask	Description
chem_cd	1	5	5	N	Chemical codes used in DPR's databases.
storet	6	10	5	C	Chemical codes used in USEPA's STORET database.
name	11	72	62	C	Name of pesticide active ingredient or breakdown product.
remarks	73	172	100	C	Supplemental information, as needed.

coll_method — Collection method codes and descriptions. Used to decode the **coll_meth_cd** field in the surface water analysis table.

Field Name	Start Column	End Column	Width	Type & Mask	Description
coll_meth_cd	1	2	2	N	Code assigned for each sample collection method used (e.g., grab).
coll_meth_desc	3	202	200	C	Description of collection method used to take sample.

county — **county codes and county names. Used to decode the county_cd field in various tables.**

Field Name	Start Column	End Column	Width	Type & Mask	Description
county_cd	1	2	2	N	County code established by numbering an alphabetized list of California's 58 counties. For example, '01' = Alameda; '58' = Yuba.
name	3	32	30	C	Name of county.

hyd_unit — **codes and description for hydrologic unit areas assigned to watersheds. Used to decode the hyd_unit_cd in the location table.**

Field Name	Start Column	End Column	Width	Type & Mask	Description
hyd_unit_cd	1	6	6	N	Hydrologic unit, area, and subarea codes assigned to watersheds in accordance to an interagency agreement between the SWRCB USGS, and DWR (1986).
hyd_unit_desc	7	206	200	C	Description of hydrologic region.

lab — **analytical laboratory codes and names. Used to decode the lab_cd field in the surface water analysis and tox tables.**

Field Name	Start Column	End Column	Width	Type & Mask	Description
lab_cd	1	4	4	N	Code assigned to each analytical laboratory.
lab_desc	5	64	60	C	Name of analytical laboratory.

sampler — **code and descriptions for devices used to collect water samples. Used to decode the sampler_cd field in the surface water analysis table.**

Field Name	Start Column	End Column	Width	Type & Mask	Description
sampler_cd	1	2	2	N	Code assigned to each device used to collect samples.
sampler_desc	3	102	100	C	Description of sampler (e.g., composite autosampler).

sample_type — **codes and descriptions for each water sample. Used to decode the samp_type_cd in the surface water analysis table.**

Field Name	Start Column	End Column	Width	Type & Mask	Description
samp_type_cd	1	2	2	N	Code assigned for each type of sample.
samp_type_desc	3	62	60	C	Description of sample (e.g., single whole water sample).

siteuse_type — codes and descriptions for the type of site use surrounding the sampling location. Used to decode the use_cd in the location table.

Field Name	Start Column	End Column	Width	Type & Mask	Description
use_cd	1	1	1	N	Code for type of site use in area of sampling site. Specifically, is the site primarily agricultural, urban, or mixed use.
use_desc	2	49	50	C	Description of type of site use at a site.

specie — codes and descriptions for the species used in toxicity testing. Used to decode the specie_cd field in the tox table.

Field Name	Start Column	End Column	Width	Type & Mask	Description
specie_cd	1	2	2	N	Code assigned for each genus and species used for toxicity test results included in the database.
specie_name	3	62	60	C	Name of species (e.g., <i>Ceriodaphnia dubia</i>).

tox_test_type — codes and descriptions for the type of toxicity test performed. Used to decode the test_cd field in the tox table.

Field Name	Start Column	End Column	Width	Type & Mask	Description
test_cd	1	2	2	N	Code for type and day of toxicity test (e.g., chronic test day 3).
test_desc	3	52	50	C	Description of type of toxicity test performed.

water_type — codes and descriptions for the type of water body sampled. Used to decode the type_cd in the location table.

Field Name	Start Column	End Column	Width	Type & Mask	Description
type_cd	1	2	2	N	Code relating to type of water body (e.g., river, drain, storm sewer).
type_desc	3	42	40	C	Description of water body.

Relationship diagram between the main tables and selected lookup tables.

